

MARYLAND STREAM WADERS SAMPLE YEAR 2003 REPORT



CHESAPEAKE BAY AND
WATERSHED PROGRAMS
MONITORING AND
NON-TIDAL ASSESSMENT
CBWP-MANTA- EA-04-2





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Maryland Stream Waders Sample Year 2003 Report

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April 2004

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Foreword

This is the forth in a series of annual reports on Maryland's Stream Waders statewide volunteer stream monitoring program managed by the Maryland Department of Natural Resources' (DNR) Monitoring and Non-tidal Assessment Division (MANTA). Stream Waders data are intended to supplement those collected for the Maryland Biological Stream Survey (MBSS) by DNR and University of Maryland biologists. This report provides an overview of the Program and summarizes results from sample year 2003.

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Introduction

Begun as a pilot in 2000, Maryland Stream Waders is a statewide volunteer stream-monitoring program managed by Maryland Department of Natural Resources (DNR), Monitoring and Non-tidal Assessment Division. Stream Waders is the volunteer component of the Maryland Biological Stream Survey (MBSS). Goals of Stream Waders are:

To increase the density of sampling sites for use in stream and watershed assessments;

To improve stream stewardship ethics and encourage local action to improve watershed management;

To educate the local community about the relationship between land use and stream quality; and

To provide quality assured information on stream quality to state, local, and federal agencies, environmental organizations, and others.

Stream Waders data are intended for use in water quality reports (such as Maryland's Biennial Water Quality Report to Congress – the 305(b) Report), watershed restoration and protection programs, regulatory programs (such as 303(d) listing), and for local government use. They are also provided to the volunteers themselves who may have an interest in a particular stream or watershed.

Stream Waders 2003 was very successful. At three locations, 114 volunteers were trained in basic stream ecology, map and Global Positioning System (GPS) use, and field sampling. The trainees formed 35 teams, and with sampling equipment and maps provided by DNR, they ventured forth into the same watersheds slated for sampling by the MBSS.

Methods

Stream Waders is designed to be seamless with the MBSS and several other organizations sampling streams in Maryland (see Appendix A). MBSS samples are collected at the watershed level (8-digit; about 70 square miles each) (Figure 1), while Stream Waders volunteers sample at the subwatershed (12-digit; about 8 square miles each) level. Thus, Stream Waders data should help “fill the gaps” left in watershed areas not sampled by MBSS.

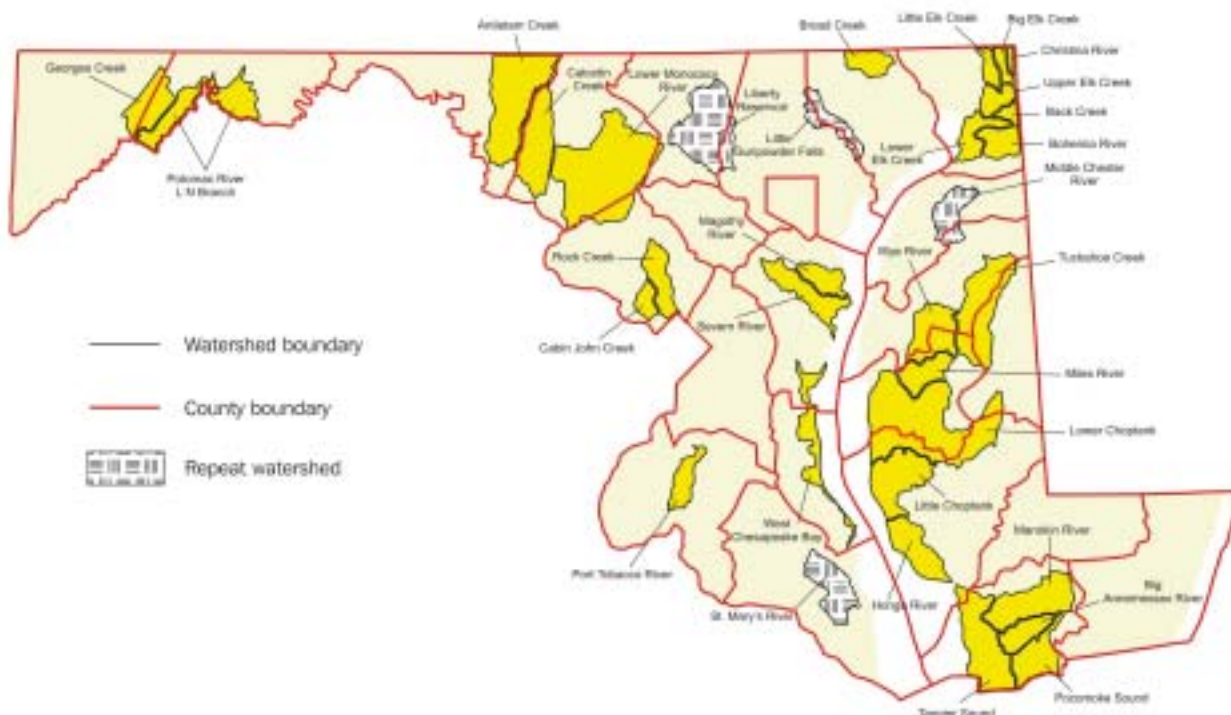


Figure 1. Watersheds sampled by Stream Waders volunteers during 2003.

Site Selection

Each year, local governments and citizen organizations interested in the selected watersheds are invited to submit site locations to be sampled by Stream Waders volunteers. For 2003, sites were requested by Anne Arundel County, Frederick County Clean Streams Program, Friends of Cabin John Creek Watershed, Potomac River Association, Port Tobacco River Conservancy, Fox Haven, Magothy River Association, Indian Head Naval Research Center, and St. Mary's College.

After attending one eight-hour training session in February, volunteers were given subwatershed maps with pre-selected sites marked. Volunteers were asked to sample during the 1 March to 30 April time period and to sample the pre-selected sites first. The target number of sites per subwatershed was five. For many subwatersheds there were fewer than five pre-selected sites, so volunteers were asked to distribute additional sites throughout the subwatershed, with one site near the most downstream part of the subwatershed. Most sites were either upstream of a road crossing or within an easy walk of a road. Volunteers selected 100-foot sections of stream for their samples. Each team of volunteers was given a GPS unit to record the latitude and longitude of the actual sampling sites.

Data Collection and Analytical Methods

Benthic macroinvertebrates were sampled using the same methods as MBSS biologists (MDNR 2001a and MDNR 2001b). Samples were collected using one-foot wide "D" nets (595 micrometers) in multiple habitats (e.g. riffles, rootwads, leaves). About 20-square feet of stream substrate were sampled per site in proportion to the available habitat. Samples were preserved in ethanol and organisms were subsampled (about 100 organisms per sample) and identified to family (MDNR 2000) by DNR staff at DNR's laboratory in Annapolis. From the list of organisms identified from each site, a family-level Index of Biotic Integrity (IBI) was calculated and each site was rated either Good (IBI 4-5) Fair (IBI 3-3.9) or Poor (IBI 1-2.9) (MDNR 1998).

In a study conducted by DNR during the first statewide round of the MBSS, the family-level IBI (used by Stream Waders) performed nearly as well as the MBSS genus-level IBI in correctly classifying reference and degraded sites (MDNR 1998). In non-coastal plain areas, the two methods performed equally well and in coastal plain areas, the family-level IBI correctly classified 77% of the sites whereas the genus-level IBI was 88% efficient.

In addition to sampling benthos at each site, volunteers noted general information about each stream, such as width and depth, as well as a description of the surrounding land and potential problems. For 2003, 24 watersheds containing 186 subwatersheds were slated for sampling by Stream Waders.

Quality Assurance/Quality Control

The Stream Waders Program contained several measures of QA/QC including testing of laboratory taxonomists and repeated subsampling and sample re-identification (MDNR 2000). Volunteers attended a one-day training session and will be asked to repeat the training each year that they participate in the program. Three percent of Stream Waders sites were sampled by DNR staff (duplicate samples) during the March-April index period (a gap of three or more weeks occurred between collection of the volunteer samples and the quality control samples due to the time needed for the volunteers to complete sampling and return the samples to DNR). Duplicate samples were also subsampled and identified by DNR staff according to MBSS protocols.

Site locations were verified by comparing the latitudes and longitudes recorded by volunteers using the GPS units with other location information from the data sheets such as stream name, nearest road crossing, and map grid.

Results from 2003 sampling

Four hundred twenty-three samples were taken by volunteers as part of the Stream Waders Program. Five samples were degraded due to excess organic material in the sample and/or too little preservative. These samples were discarded prior to subsampling. Twenty-six samples were taken incorrectly, as evidenced by too little material (organisms, detritus, etc.) in the sample container. Five samples were taken from unverifiable locations and one sample was taken from a tidal stream. These 37 samples were not included in the final database.

Forty-two samples contained fewer than 60 organisms. The benthic IBI is generally less reliable when organism counts are less than 60. However, low organism counts are likely to occur at severely degraded sites, such as those in heavily urbanized areas, justifying keeping samples from such sites in the database. Thus, site and benthic community data were examined and best professional judgment was used to delete 28 of the 42 "low-organism count" samples from the database.

Three hundred fifty eight samples were of high enough quality to calculate an Index of Biotic Integrity. Nineteen duplicate samples were collected by DNR staff to be used for Quality Control.

Stream Waders volunteers sampled 18 of the scheduled 24 watersheds, with an average of 20 sites per watershed (Figure 3). Of the 186 subwatersheds slated for sampling in 2003, 87 contained at least one sample. The average number of samples per subwatershed was 4.2 and 46% of all sampled subwatersheds had five or more samples.

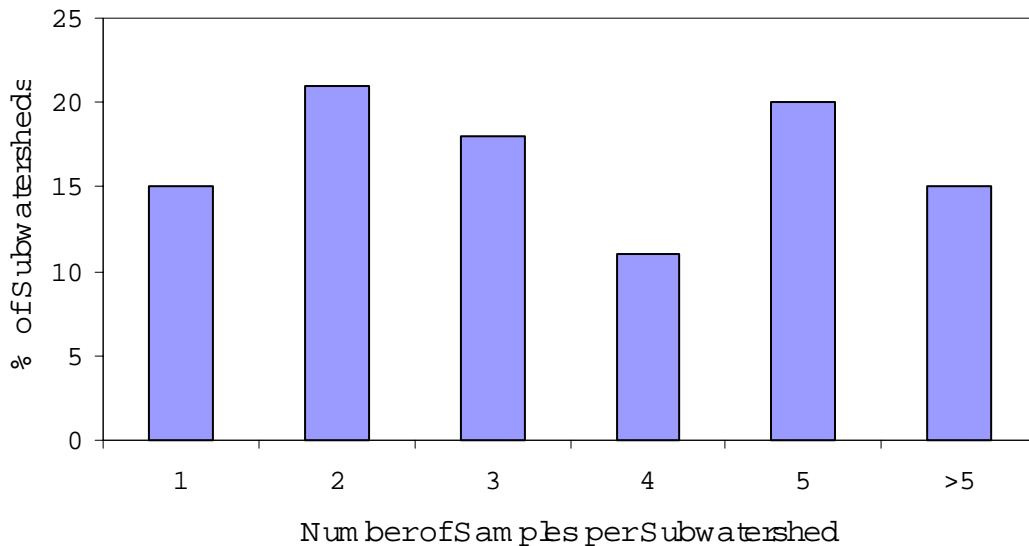


Figure 3. Number of Stream Waders samples per Subwatershed; 2003 sampling.

How closely were MBSS and Stream Waders samples matched?

Benthic IBI values from the 19 duplicate samples taken by MBSS staff corresponded well with Stream Waders results from the same sites (Figure 4). The mean difference between the Stream Waders and MBSS IBI s for all pairs of sites was 0.12. Neither MBSS nor Stream Waders samples had a consistently higher or lower IBI .

Stream Waders and MBSS duplicate samples were in good agreement with respect to identifying poor quality sites (i.e., those with IBI s less than 3). Eight sites were rated as Poor in both volunteer and duplicate samples. At two sites, duplicate samples were rated Poor, but Stream Waders samples were rated Fair. One sample was rated Poor by Stream Waders and its corresponding duplicate sample was rated Fair. In identification of sites as fair or good, there was good agreement. Six sites were identified as Fair or Good in both volunteer and quality control samples.

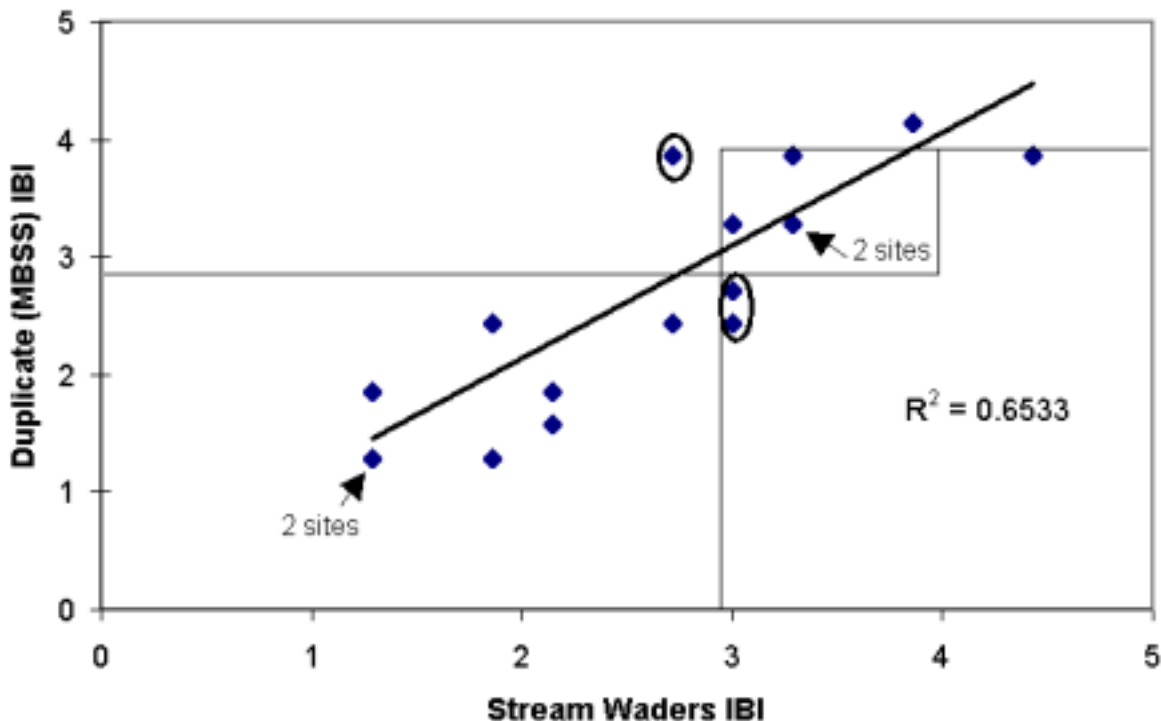


Figure 4. Stream Waders and MBSS Family IBI values from the same sites. Boxes indicate boundaries for Good, Fair, and Poor stream health ratings. The only pairs of samples that disagreed with respect to stream health category (i.e., Poor or not) are circled.

Conclusions

Stream Waders 2003 was a success. Aside from acquiring data from 358 sites that will be used to supplement MBSS data in watershed assessment reports, DNR has continued to include Maryland's residents in the watershed assessment process and to educate volunteers on stream stewardship and ecology. Each year we work to improve the Stream Waders program.

In the future, we plan to improve the program by encouraging more local governments and citizen organizations to participate, increasing the utility of the data.

At less than \$1,500 per subwatershed, Stream Waders is a cost-effective way of supplementing the results of the Maryland Biological Stream Survey. With the increased coverage provided by Stream Waders, other government agencies and watershed organizations will have an additional tool to help identify streams in need of protection or restoration. However, a long-term and stable source of funds is needed to keep Stream Waders going into the future.

References

MDNR 1998. Development of a Benthic Index of Biotic Integrity for Maryland Streams. Maryland Department of Natural Resources. Annapolis, Maryland.

MDNR 2000. Maryland Biological Stream Survey Laboratory Methods for Benthic Macroinvertebrate Processing and Taxonomy. Maryland Department of Natural Resources. Annapolis, Maryland.

MDNR 2001a. Maryland Stream Waders Volunteer Stream Monitoring Manual. Maryland Department of Natural Resources. Annapolis, Maryland.

MDNR 2001b. Maryland Biological Stream Survey Sampling Manual. Maryland Department of Natural Resources. Annapolis, Maryland.

For More Information...

For more information on the Maryland Stream Waders Program, wade on over to www.dnr.state.md.us/mbss/waders.html. Our web site provides an overview of the Program, periodic updates on annual training sessions, and a searchable database. You can also drop us an email at streamwaders@dnr.state.md.us, or call toll free (in Maryland) 1-877-620-8DNR (x8623). Our local phone number is 410-260-8623. Lastly, you can send land mail to either Dan Boward or Rita Bruckler at:

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Appendix A. List of organizations using Maryland Biological Stream Survey (MBSS)/Stream Waders field methods to collect benthic macroinvertebrates.

Aberdeen Proving Grounds (U.S. Army)
Baltimore City Department of Public Works
Baltimore County Department of Environmental Protection and Resource
Management
Carroll County Department of Water Resource Planning
Friends of the Cabin John Creek Watershed
Fox Haven
Herring Run Watershed Association
Howard County Department of Public Works
Indian Head Naval Base (U.S. Navy)
Magothy River Association
Maryland-National Capitol Parks and Planning Commission
Montgomery County Department of Environmental Protection
Mount Pleasant Conservancy
National Park Service
Parkers Creek Task Force/Calverton High School
Port Tobacco Conservancy
Potomac River Association
Prince George's County Department of Environmental Resources
Ridge and Valley Stream Keepers
St. Mary's College
University of Maryland Appalachian Laboratory

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Appendix B. Stream Waders sites in the watersheds sampled in March and April 2003 with stream name, site number, nearest road(s), and stream condition rating (based on the family-level Index of Biotic Integrity). The tables are in order alphabetically by watershed. Additional information, such as a list of benthic macroinvertebrate families found at each site, can be found at <http://mddnr.chesapeakebay.net/mbss/streamwaders.cfm>

2003 Stream Waders results in the **Antietam Creek** watershed (total sites = 19). Samples were collected by Neil and Laura Wright.

Stream Name	Site	Nearest Road(s)	County	IBI Score	Condition
Beaver Cr.	194-2-2003	Rt. 66	Washington	1.3	POOR
Beaver Cr.	195-5-2003	Beaver Creek Rd.	Washington	1.3	POOR
Beaver Cr.	195-4-2003	Rt. 40 and Cool Hollow Rd.	Washington	1.3	POOR
Beaver Cr.	195-3-2003	Tom's Rd.	Washington	1.3	POOR
Beaver Cr.	195-2-2003	Alternate Rt. 40	Washington	1.3	POOR
Beaver Cr.	194-1-2003	Beaver Creek Church Rd.	Washington	1.3	POOR
Beaver Cr.	195-1-2003	Barnes Rd.	Washington	2.4	POOR
Beaver Cr.	194-5-2003	Crystal Falls Dr. and Maple Ave.	Washington	3.3	FAIR
Beaver Cr. UT	194-4-2003	Pondsville Rd.	Washington	3.3	FAIR
Black Rock Cr.	193-2-2003	Black Rock Rd.	Washington	1.0	POOR
Black Rock Cr.	193-1-2003	Country Shore Ln.	Washington	1.9	POOR
Black Rock Cr.	193-4-2003	Black Rock Rd.	Washington	2.4	POOR
Black Rock Cr.	193-3-2003	Crystal Falls Rd.	Washington	3.9	FAIR
Little Beaver Cr.	192-1-2003	Alternate Rt. 40	Washington	1.0	POOR
Little Beaver Cr.	192-2-2003	Tom's Rd.	Washington	1.0	POOR
Little Beaver Cr.	192-5-2003	Rt. 66	Washington	2.4	POOR
Little Beaver Cr.	192-3-2003	San Mar Rd.	Washington	3.0	FAIR
Little Beaver Cr. UT	192-4-2003	Mount Lena Rd.	Washington	2.7	POOR
Mount Aetna Cr.	194-3-2003	Crest Valley Rd. and Bailey Rd.	Washington	3.3	FAIR

Notes:

IBI Categories: 1.0 – 2.9 = Poor; 3.0 – 3.9 = Fair; 4.0 – 5.0 = Good

Those sites with samples having fewer than 60 organisms and no IBI calculation are not listed here. See the Methods section of the report for details.

Sites sampled by DNR staff (QC sites) contain a “9” after the first dash in the SITE column.

Samples collected for special programs or projects are noted at the top of each table.

Cr. = Creek; Br. = Branch; R. = River; UT = Unnamed Tributary.

Appendix B (cont.)

2003 Stream Waders results in the **Big Elk Creek** watershed (total sites = 11). Samples were collected by long-time DNR volunteer Ephraim Levin, Mike Levin, Dan Risley and Rebecca Green Blatt.

Stream Name	Site	Nearest Road(s)	County	IBI Score	Condition
Big Elk Cr.	386-5-2003	Ricketts Mill Rd.	Cecil	3.0	FAIR
Big Elk Cr.	386-3-2003	Bruster Bridge Rd. and Rt. 316	Cecil	3.3	FAIR
Big Elk Cr.	386-2-2003	Rt. 273	Cecil	3.9	FAIR
Gramie's Run	387-4-2003	Gallagher Rd. and Russel Rd.	Cecil	1.3	POOR
Gramie's Run	387-3-2003	Gallagher Rd. and Russel Rd.	Cecil	2.1	POOR
Gramie's Run	387-5-2003	Booth Rd. and Barnett Rd.	Cecil	2.4	POOR
Gramie's Run	387-1-2003	Gallagher Rd.	Cecil	3.9	FAIR
Upper Elk Cr. UT	385-3-2003	Hickory Ln. and Bluegrass Dr.	Cecil	1.0	POOR
Upper Elk Cr. UT	385-1-2003	Rt. 316 and Reckets Mill Rd.	Cecil	1.3	POOR
Upper Elk Cr. UT	385-4-2003	Maryland Rt. 216	Cecil	1.6	POOR
Upper Elk Cr. UT	385-2-2003	Rt. 316 and Riverside Dr.	Cecil	1.9	POOR

2003 Stream Waders results in the **Breton Bay** watershed (total sites = 24). Samples were collected by Bill Cheeseman, Tom Hamilton, Bob Lewis, John Shartzter and Clare Whitbeck. These results will support the Watershed Restoration Action Strategy for Breton Bay.

Stream Name	Site	Nearest Road(s)	County	IBI Score	Condition
Brooks Run	723-4-2003	Speith Rd.	St. Mary's	2.7	POOR
Brooks Run	723-2-2003	Hollywood Rd.	St. Mary's	3.9	FAIR
Burnt Mill Cr.	724-2-2003	Bishop Rd.	St. Mary's	3.3	FAIR
Burnt Mill Cr.	724-1-2003	Friendship School Rd.	St. Mary's	3.6	FAIR
Burnt Mill Cr.	724-5-2003	Burnt Mill Rd.	St. Mary's	3.9	FAIR
Cherry Cove Cr.	720-7-2003	Society Hill Rd.	St. Mary's	1.9	POOR
Combs Cr.	720-4-2003	Newtowne Neck Rd.	St. Mary's	1.3	POOR
Glebe Run	722-2-2003	St. Andrews Church	St. Mary's	4.7	GOOD
Gravelly Run	722-1-2003	St. Andrews Church Rd.	St. Mary's	3.6	FAIR
Greenhill Run	721-4-2003	Rt.5 and Maypole Rd.	St. Mary's	3.0	FAIR
Lows Run	723-1-2003	Saint Johns Rd.	St. Mary's	1.6	POOR
McIntosh Run	723-3-2003	McIntosh Rd.	St. Mary's	2.7	POOR
McIntosh Run	721-3-2003	Rt.5 and Rt.243	St. Mary's	3.6	FAIR
Miski Run	721-5-2003	Burnt Mill Rd.	St. Mary's	3.3	FAIR
Moll Dyers Run	720-6-2003	Rt. 5	St. Mary's	3.3	FAIR
Moll Dyers Run	720-5-2003	Rt. 244	St. Mary's	3.9	FAIR

Appendix B (cont.)

Stream Waders results in **Breton Bay** watershed (cont.)

Stream Name	Site	Nearest Road(s)	County	IBI Score	Condition
Nelson Run	721-2-2003	Rt.5 and Rt.243	St. Mary's	1.6	POOR
Nelson Run	721-1-2003	Rt.5 and Rt. 243	St. Mary's	1.9	POOR
Nelson Run	721-6-2003	Rt.234	St. Mary's	3.0	FAIR
Rich Neck Cr.	724-3-2003	Jones Rd.	St. Mary's	3.3	FAIR
Tom Swamp Run	724-4-2003	Jones Rd.	St. Mary's	3.3	FAIR
Town Run	720-1-2003	Rt. 5 and Rt. 245	St. Mary's	2.4	POOR
Town Run	720-3-2003	Hollywood Rd. and Leonard Hall Dr.	St. Mary's	3.6	FAIR
Town Run	720-2-2003	Fenwick St. and Courthouse Rd.	St. Mary's	3.6	FAIR

2003 Stream Waders results in the **Cabin John Creek** watershed (total sites = 15). Samples were collected by Phyllis Maringer, Julie Steinberg, Kirsten Emigholz, Doug Holy, Warren Minners, James Loutsch, Roy Seidenstein, Andrew Gray, Chris Ladd, Pat Miller, Gene Owens, Joe Beatty, Karrigan Bork and Laura Bork. These results will support a project comparing Stream Waders methods with those of the Audubon Naturalists Society, used by the Friends of the Cabin John Creek Watershed. Thanks to Roy Seidenstein for directing this Stream Waders effort for the third year in a row.

Stream Name	Site	Nearest Road(s)	County	IBI Score	Condition
Bannockburn Br.	841-8-2003	Braeburn Place	Montgomery	1.3	POOR
Booze Cr.	841-16-2003	Beech Tree Rd. and Burning Tree Rd.	Montgomery	1.0	POOR
Buck Br.	841-14-2003	Cherborough Rd. and Willowbrook Rd.	Montgomery	1.0	POOR
Buck Br.	841-3-2003	Democracy Blvd. and Gainsborough Rd.	Montgomery	1.3	POOR
Cabin John Cr.	841-4-2003	Bradley Blvd. and Holly Oak St.	Montgomery	1.3	POOR
Cabin John Cr.	841-11-2003	MacArthur Blvd. and Cabin John Pkwy.	Montgomery	1.3	POOR
Cabin John Cr.	841-9-2003	Tower Oaks Blvd. and Interstate Rt. 270	Montgomery	1.3	POOR
Cabin John Cr.	841-6-2003	Seven Locks Rd. and Rt.495	Montgomery	1.3	POOR
Cabin John Cr.	841-2-2003	Montrose Rd. and Seven Locks Rd.	Montgomery	1.3	POOR
Cabin John Cr.	841-15-2003	Goya Dr. dead end	Montgomery	1.6	POOR
Cabin John Cr.	841-12-2003	Cabin John Pkwy. and McArthur Blvd.	Montgomery	1.6	POOR
Cabin John Cr.	841-7-2003	Seven Locks Rd. and Cypress Grove Ln.	Montgomery	1.6	POOR
Cabin John Cr. UT	841-13-2003	River Rd. and Clewerwall Rd.	Montgomery	1.6	POOR
Old Farm Br.	841-10-2003	Sherry Ct.	Montgomery	1.3	POOR
Snakeden Br.	841-1-2003	7 Locks Rd. and Tuckerman Ln.	Montgomery	1.3	POOR

Appendix B (cont.)

2003 Stream Waders results in the **Catoctin Creek** watershed (total sites = 40). Samples were collected by Amy Bishop, Ron Bishop, Emma Carlson, Jared Carlson, Kent Carlson, Jim Carpenter, Letty Carpenter, Chris Currier, Todd Gale, Susan Hanson, Kevin McCormack, Sheila McIntyre, Kim Roberts, Kay Schultz, Denny Sherrill, and Hilari Varnadore.

Stream Name	Site	Nearest Road(s)	County	IBI Score	Condition
Bolivar Br.	218-4-2003	Bolivar Court and Bolivar Rd.	Frederick	1.3	POOR
Broad Run	214-2-2003	Saint Mark's Rd. and Gapland Rd.	Frederick	1.3	POOR
Broad Run	214-3-2003	Catholic Church Rd.	Frederick	1.9	POOR
Catoctin Cr.	213-2-2003	Rt. 383	Frederick	1.6	POOR
Catoctin Cr.	213-3-2003	Rt. 180	Frederick	1.6	POOR
Catoctin Cr.	215-2-2003	Sumantown Rd.	Frederick	2.4	POOR
Catoctin Cr.	218-3-2003	Station Rd. and Shank Rd.	Frederick	2.4	POOR
Catoctin Cr.	215-16-2003	Bennies Hill Rd.	Frederick	2.7	POOR
Catoctin Cr.	218-2-2003	Rt. 17 and Old Hagerstown Rd.	Frederick	2.7	POOR
Catoctin Cr.	215-12-2003	Wiles Br.	Frederick	3.0	FAIR
Catoctin Cr.	215-1-2003	Poffenberger Rd.	Frederick	3.0	FAIR
Catoctin Cr.	215-15-2003	Rt. 17	Frederick	3.6	FAIR
Catoctin Cr. UT	212-3-2003	Jefferson Pike and Rt. 340	Frederick	1.3	POOR
Catoctin Cr. UT	213-1-2003	Corun Rd. and Rt. 383	Frederick	1.9	POOR
Catoctin Cr. UT	212-1-2003	Sigler Rd.	Frederick	2.7	POOR
Catoctin Cr. UT	212-2-2003	Horine Rd. and Gene Hemp Rd.	Frederick	3.0	FAIR
Cone Br.	216-11-2003	Walnut Pond Rd. Cul-de-sac	Frederick	1.9	POOR
Deer Springs Br.	216-14-2003	Holter Rd.	Frederick	1.3	POOR
Hollow Cr.	216-4-2003	Hollow Rd.	Frederick	1.0	POOR
Hollow Cr.	216-10-2003	Hollow Rd. and Fox Field Rd.	Frederick	1.3	POOR
Hollow Cr. UT	216-17-2003	Beechtree Dr. Crossing	Frederick	1.3	POOR
Lewis Mill Br.	213-4-2003	Old Middletown Rd. and Poole Rd.	Frederick	2.7	POOR
Lewis Mill Br.	213-5-2003	Poffenberger Rd. and Corun Rd.	Frederick	3.6	FAIR
Little Catoctin Cr.	220-2-2003	Easterday Rd.	Frederick	1.3	POOR
Little Catoctin Cr.	220-1-2003	Church Hill Rd.	Frederick	1.9	POOR
Little Catoctin Cr.	217-1-2003	Wistman Ln. and Crow Rock Rd.	Frederick	4.4	GOOD
Little Catoctin Cr. UT	220-5-2003	Easterday Rd.	Frederick	1.3	POOR
Little Catoctin Cr. UT	220-3-2003	Dog Rd. and Pleasant Walk	Frederick	3.3	FAIR
Little Catoctin Cr. UT	217-2-2003	Highland School Rd.	Frederick	3.3	FAIR
Little Catoctin Cr. UT	220-4-2003	Easterday Rd. and Pleasant Walk	Frederick	5.0	GOOD
Middle Cr.	221-1-2003	Brown Rd.	Frederick	3.0	FAIR
Middle Cr.	219-3-2003	Rt. 17	Frederick	3.3	FAIR
Middle Cr.	221-2-2003	Badensburg Hollow Rd.	Frederick	4.1	GOOD
Middle Cr. UT	215-13-2003	Picnic Woods Rd.	Frederick	1.9	POOR
Middle Cr. UT	219-1-2003	East Church Hill Rd.	Frederick	2.1	POOR
Middle Cr. UT	219-4-2003	Middle Point Rd.	Frederick	2.4	POOR
Samuels Run	214-1-2003	Gapland Rd and Ahalt Distillery Rd.	Frederick	2.4	POOR
Spruce Run	219-5-2003	Spruce Run	Frederick	3.6	FAIR
West Br.	219-2-2003	Rt. 17 and Harp Hill Rd.	Frederick	1.3	POOR
Wiles Br.	215-3-2003	Sewer Plant Rd.	Frederick	1.0	POOR

Appendix B (cont.)

2003 Stream Waders results in the **Georges Creek** watershed (total sites = 9). Samples were collected by Ron Boyer, Liz McDowell, Lisa Beeman, John Carey, Emily Baughman and Sarah Hopwood. Results will support the Watershed Action Strategy for Georges Creek.

Stream Name	Site	Nearest Road(s)	County	IBI Score	Condition
Georges Cr.	94-2-2003	Welch Hill Rd.	Allegany	1.0	POOR
Georges Cr.	93-1-2003	Caboose Rd.	Allegany	1.3	POOR
Georges Cr. UT	88-3-2003	Rt. 36	Allegany	2.4	POOR
Georges Cr. UT	88-2-2003	Sugar Maple Rd. and Metz Terrace	Allegany	3.0	FAIR
Michael's Run	87-3-2003	Aaron Run Rd.	Garrett	3.9	FAIR
Mill Run	87-1-2003	Russel Rd. and Michael Rd.	Garrett	1.3	POOR
Mill Run UT	87-2-2003	Michael Rd.	Garrett	4.7	GOOD
Moore's Run	88-4-2003	Potomac Hollow Rd.	Allegany	1.6	POOR
Neff Run	91-1-2003	Ocean View Rd.	Allegany	2.1	POOR

2003 Stream Waders results in the **Liberty Reservoir** watershed (total sites = 69). Samples were collected by Drew Altland, David Andrews, Frank Bubczyk, Aimee Cauthorn, Alli Cauthorn, Chris Currier, Jean Kapusnick, Peter Keubler, Sheila McIntyre, Monika Schmitz, Robyn Silverman, Mike Thompson, and Dana Walton.

Stream Name	Site	Nearest Road(s)	County	IBI Score	Condition
Aspen Run	1058-4-2003	Lees Mill Rd. and Borthers Rd.	Carroll	1.0	POOR
Aspen Run	1060-1-2003	Hoffman Mill Rd. and Coon Club Rd.	Carroll	2.4	POOR
Aspen Run	1060-4-2003	Leisters School Rd. and Gorsuch Rd.	Carroll	3.3	FAIR
Aspen Run	1060-2-2003	Gablehammer Rd. and Manchester Rd.	Carroll	3.6	FAIR
Beaver Run	1057-31-2003	Greens Mill Rd.	Carroll	1.3	POOR
Beaver Run	1057-30-2003	Kays Mill Rd.	Carroll	2.7	POOR
Deep Run	1058-2-2003	Saint Paul Rd. and Blue Grass Ln.	Carroll	1.6	POOR
Deep Run	1058-1-2003	Emory Rd. and Wesley Rd.	Carroll	3.0	FAIR
Deep Run	1058-3-2003	Lees Mill Rd. and Carrollton Rd.	Carroll	3.0	FAIR
East Br. Patapsco R.	1052-5-2003	Patapsco Rd. and Finn Dr.	Carroll	2.7	POOR
East Br. Patapsco R.	1052-2-2003	Coon Club Rd. and Houck Rd.	Carroll	3.6	FAIR
East Br. Patapsco R.	1052-4-2003	Carrollton Rd. and Ridge Rd.	Carroll	3.6	FAIR
East Br. Patapsco UT	1052-1-2003	Eve's Way and Houcksville Rd.	Carroll	3.6	FAIR
East Br. Patapsco UT	1052-3-2003	Shamrock Cir. and Raintree Ave.	Carroll	4.7	GOOD
East Branch	1059-2-2003	Rt. 482. Hampstead Mexico Rd.	Carroll	1.6	POOR
East Branch	1059-1-2003	Brodbeck Rd.	Carroll	1.9	POOR
East Branch	1059-4-2003	Brodbeck Rd.	Carroll	2.7	POOR
East Branch UT	1059-5-2003	Cape Horn Rd. and Harvey Gimmel Rd.	Carroll	3.0	FAIR
Indian Run	1059-6-2003	Shiloh Rd.	Carroll	2.7	POOR
Indian Run	1059-3-2003	Brodbeck Rd.	Carroll	2.7	POOR
Indian Run	1059-93-2003	Brodbeck Rd.	Carroll	3.9	FAIR
Liberty Reservoir UT	1046-5-2003	Oak Hill Dr.	Carroll	1.3	POOR
Liberty Reservoir UT	1046-93-2003	Carroll Highlands Rd.	Carroll	1.6	POOR

Appendix B (cont.)

Stream Waders results in the **Liberty Reservoir** watershed (cont.).

Stream Name	Site	Nearest Road(s)	County	IBI Score	Condition
Liberty Reservoir UT	1046-95-2003	Todd Ln. and Oak Hill Dr.	Carroll	1.9	POOR
Liberty Reservoir UT	1046-92-2003	Marriottsville No. 2 Rd.	Carroll	1.9	POOR
Liberty Reservoir UT	1046-3-2003	Carroll Highlands Rd.	Carroll	2.1	POOR
Liberty Reservoir UT	1046-2-2003	Marriott June Rd.	Carroll	2.1	POOR
Liberty Reservoir UT	1046-94-2003	Snowdens Run Rd.	Carroll	2.4	POOR
Liberty Reservoir UT	1046-4-2003	Snowdens Run Rd.	Carroll	2.7	POOR
Liberty Reservoir UT	1046-1-2003	Bandy Ave.	Carroll	3.0	FAIR
Liberty Reservoir UT	1046-91-2003	Bandy Ave.	Carroll	3.3	FAIR
Little Morgan Run	1055-5-2003	Nichodemus Rd.	Carroll	1.6	POOR
Little Morgan Run	1055-1-2003	Gist Rd.	Carroll	1.9	POOR
Little Morgan Run	1049-91-2003	Linton Rd.	Carroll	2.4	POOR
Little Morgan Run	1049-1-2003	Linton Rd.	Carroll	3.0	FAIR
Little Morgan Run	1055-4-2003	Warfieldsburg Rd.	Carroll	3.3	FAIR
Little Morgan Run	1049-3-2003	Old Washington Rd.	Carroll	4.4	GOOD
Little Morgan Run UT	1055-2-2003	Bertic Ave. and Herbert Ave.	Carroll	1.0	POOR
Little Morgan Run UT	1055-3-2003	Warfieldsburg Rd.	Carroll	3.6	FAIR
Little Morgan Run UT	1049-92-2003	Linton Rd.	Carroll	3.9	FAIR
Little Morgan Run UT	1049-2-2003	Linton Rd.	Carroll	4.4	GOOD
Middle Run	1056-20-2003	Birdview Rd.	Carroll	2.1	POOR
Middle Run	1056-21-2003	Black Rock Dr. and Slasman Rd.	Carroll	2.4	POOR
Middle Run	1056-11-2003	Maryland Rt.19 and Old Gamber Rd.	Carroll	2.7	POOR
Morgan Run	1054-4-2003	Nichodemus Rd.	Carroll	1.9	POOR
Morgan Run UT	1054-5-2003	Old Westminster Rd.	Carroll	1.3	POOR
Morgan Run UT	1054-2-2003	Rt.27 and Linzee Dr.	Carroll	1.9	POOR
Morgan Run UT	1054-3-2003	Rt.27	Carroll	2.1	POOR
Morgan Run UT	1054-1-2003	Marston Rd. and Rt. 27	Carroll	2.4	POOR
Patapsco R. - East Br.	1059-91-2003	Brodbeck Rd.	Carroll	1.3	POOR
Patapsco R. - East Br.	1059-94-2003	Brodbeck Rd.	Carroll	2.4	POOR
Patapsco R. - East Br. UT	1059-95-2003	Cape Horn Rd.	Carroll	2.7	POOR
Patapsco R. UT	1048-1-2003	Ivy Mill Rd.	Baltimore	3.3	FAIR
Patapsco R. - West Br.	1051-94-2003	Tannery Rd.	Carroll	2.4	POOR
Patapsco R. - West Br. UT	1051-95-2003	Tannery Rd.	Carroll	3.9	FAIR
Patapsco R. - West Br.	1051-92-2003	Reese Rd.	Carroll	3.9	FAIR
Patapsco R. - West Br. UT	1051-91-2003	Carrollton Rd.	Carroll	4.1	GOOD
Patapsco R. - West Br.	1051-2-2003	Reese Rd.	Carroll	2.7	POOR
Roaring Run	1048-4-2003	Brown Rd.	Baltimore	3.3	FAIR
Timber Run/Cooks Br.	1048-2-2003	Wood Gait Ct.	Baltimore	4.7	GOOD
West Br.	1062-5-2003	Beggs Rd. and Bachmans Rd.	Carroll	1.3	POOR
West Br.	1051-4-2003	Tannery Rd.	Carroll	1.9	POOR
West Br. UT	1062-6-2003	Sullivan Rd. and Woodleigh Rd.	Carroll	1.3	POOR
West Br. UT	1062-40-2003	Sullivan Heights Rd.	Carroll	1.6	POOR
West Br. UT	1062-7-2003	Sunshine Way and Eden Court	Carroll	1.6	POOR
West Br. UT	1051-3-2003	Gorsuch Rd. N.	Carroll	1.9	POOR
West Br. UT	1051-5-2003	Tannery Rd.	Carroll	3.3	FAIR
West Br. UT	1051-1-2003	Carrollton Rd.	Carroll	3.9	FAIR
White Dale Run	1060-3-2003	Shiloh Rd. and Gorsuch Rd.	Carroll	4.7	GOOD

Appendix B (cont.)

2003 Stream Waders results in the **Little Gunpowder Falls** watershed (total sites = 15). Samples were collected by Daniel Anderson, Nathan Jean, Angie Risley and Dan Risley.

Stream Name	Site	Nearest Road(s)	County	IBI Score	Condition
Little Gunpowder Falls	299-1-2003	Pocock Rd. and Hutchins Mill Rd.	Harford	2.4	POOR
Little Gunpowder Falls	299-9-2003	Hess Rd.	Harford	2.7	POOR
Little Gunpowder Falls	298-8-2003	Guyton and Bottom Rds.	Harford	2.7	POOR
Little Gunpowder Falls	298-7-2003	Rt. 1	Harford	3.3	FAIR
Little Gunpowder Falls	298-6-2003	Rt. 7	Baltimore	3.3	FAIR
Little Gunpowder Falls	298-97-2003	Rt.1	Harford	3.3	FAIR
Little Gunpowder Falls	298-96-2003	Rt.7	Harford	3.9	FAIR
Little Gunpowder Falls	298-98-2003	Guyton Rd.	Harford	3.9	FAIR
Little Gunpowder Falls	298-9-2003	Jericho Rd.	Baltimore	3.9	FAIR
Little Gunpowder Falls UT	298-13-2003	Guyton Rd.	Harford	3.9	FAIR
Nelson Br.	299-2-2003	Hutchins Mill Rd.	Harford	3.0	FAIR
Parker Br.	299-3-2003	Manor Rd. and Pike Rd.	Harford	3.0	FAIR
Sawmill Br.	299-8-2003	Green Glade Court	Baltimore	2.7	POOR
Sawmill Br.	299-6-2003	Green Glade Court	Baltimore	3.0	FAIR
Sawmill Br. UT	299-7-2003	Green Glade Court	Baltimore	3.9	FAIR

2003 Stream Waders results in the **Lower Choptank River** watershed (total sites = 15). Samples were collected by Katie Basiotis, Julie Dyer, Lydia Menendez, Angela Baldwin, Jordan Castello, Tina Saunders, Liz Trosper, Ed McNeal and Mark Trice.

Stream Name	Site	Nearest Road(s)	County	IBI Score	Condition
Boilingbroke Cr.	459-1-2003	Beaver Dam Rd.	Talbot	1.3	POOR
Boilingbroke Cr.	459-2-2003	Beaver Dam Rd. and Barber Rd.	Talbot	2.1	POOR
Hunting Cr.	471-1-2003	Richardson Rd.	Caroline	1.0	POOR
Hunting Cr.	471-3-2003	Craft Rd.	Caroline	2.1	POOR
Hunting Cr.	471-4-2003	Rt.331 and Rt.318	Caroline	3.3	FAIR
Hunting Cr. UT	471-5-2003	Linchester Rd.	Caroline	3.0	FAIR
Indian Cr. UT	463-2-2003	White Marsh Rd.	Talbot	1.9	POOR
Peach Blossom Cr. UT	462-1-2003	Schwaninger Rd.	Talbot	1.6	POOR
Raccoon Cr.	459-3-2003	Bambury Rd.	Talbot	3.3	FAIR
Upper Hunting Cr.	471-2-2003	Schulke Rd.	Caroline	1.0	POOR
Warwick R. UT	466-5-2003	Branch Rd. and Ronnie Rd.	Dorchester	1.3	POOR
Warwick R. UT	466-3-2003	Rt. 16 and Hicksbury Rd.	Dorchester	2.1	POOR
Warwick R. UT	466-1-2003	Rt. 16 and Hurlock Rd.	Dorchester	3.3	FAIR
Warwick R. UT	466-4-2003	Rt. 16 and Hicksburg Rd.	Dorchester	3.3	FAIR
Warwick R. UT	466-2-2003	Rt. 16 and Hicksburg Rd.	Dorchester	3.6	FAIR

Appendix B (cont.)

2003 Stream Waders results in the **Lower Monocacy River** watershed (total sites = 22). Samples were collected by Marny Malin, Shannon Moore, Precious Baines, James Coulombe, Kathy Marmut, Tim Goodfellow, Alice Miller and Justin Dickerson. These results will support Frederick County's stream monitoring efforts as well as the Monocacy River Watershed Restoration Action Strategy.

Stream Name	Site	Nearest Road(s)	County	IBI Score	Condition
Bennet Cr.	224-3-2003	Lilly Pons Rd.	Frederick	1.3	POOR
Bush Cr.	229-1-2003	Rt. 355 and Monocacy Battlefield Rd.	Frederick	2.7	POOR
Bush Cr. UT	228-2-2003	Bill Moxley Rd. and Westwind Dr.	Frederick	2.7	POOR
Carroll Cr.	233-1-2003	College Terrace Rd.	Frederick	1.3	POOR
Carroll Cr.	233-2-2003	Highland Rd.	Frederick	1.3	POOR
Church Br.	228-1-2003	Weller Rd. and Weller Hill Rd.	Frederick	2.4	POOR
Indian Cave Cr.	232-3-2003	Boyer's Mill Rd.	Frederick	1.6	POOR
Israel Cr.	239-1-2003	Maryland Rt. 550 (Woodsboro Pike)	Frederick	2.4	POOR
Israel Cr. UT	239-2-2003	Etzler Mill Rd.	Frederick	1.3	POOR
Israel Cr. UT	237-1-2003	Chestnut Grove Rd.	Frederick	1.9	POOR
Linganore Cr.	236-4-2003	Sanandrew Dr.	Frederick	1.3	POOR
Linganore Cr.	232-2-2003	Linganore Rd. and Rt. 70	Frederick	2.4	POOR
Little Bennett Cr. UT	223-2-2003	Sugarloaf Mountain Rd. and Thurston Rd.	Frederick	2.7	POOR
Little Bennett Cr. UT	223-1-2003	Old Hundred Rd. near Rt. 270	Montgomery	4.1	GOOD
Long Br.	232-1-2003	Musseter Rd. and Holly Hills Dr.	Frederick	3.0	FAIR
Monocacy R. UT	229-2-2003	Rt. 355 and Monocacy Battlefield Rd.	Frederick	1.9	POOR
Rock Cr.	233-3-2003	Bel Air Rd. and Key Pkwy.	Frederick	1.3	POOR
South Fork UT.	235-2-2003	Harrisville Rd. and Westvaleor Rd.	Frederick	2.4	POOR
Urbana Br. UT	224-4-2003	Thurston Rd. (Rt. 80)	Frederick	1.6	POOR
Urbana Br. UT	224-1-2003	Thurston Rd. (Rt. 80)	Frederick	1.9	POOR
Urbana Br. UT	224-2-2003	Virginia Ln.	Frederick	3.0	FAIR
Woodville Br.	235-1-2003	Woodville Rd. and Old Bohn Rd.	Frederick	1.6	POOR

2003 Stream Waders results in the **Magothy River** watershed (total sites = 9). Samples were collected by Peter Bergstrom, Mark Stewart and Rick Danforth. Thanks to Peter Bergstrom for directing Stream Waders efforts in the Magothy River watershed.

Stream Name	Site	Nearest Road(s)	County	IBI Score	Condition
Black Hole Cr.	1004-1-2003	Holmewood Rd.	Anne Arundel	2.1	POOR
Branch Grays Cr.	1004-2-2003	North Shore Rd.	Anne Arundel	1.9	POOR
Cattail Cr.	1005-6-2003	Truckhouse Rd.	Anne Arundel	1.0	POOR
Cornfield Cr.	1004-3-2003	Curalie Court	Anne Arundel	1.6	POOR
Cottontail Cr.	1005-4-2003	Asbury Dr.	Anne Arundel	1.3	POOR
Dividing Cr.	1003-1-2003	Richie Hwy. and Jones Station Rd.	Anne Arundel	1.0	POOR
Magothy Br.	1005-7-2003	Lake Waterford Park	Anne Arundel	2.7	POOR
Old Mac Cr.	1005-3-2003	Rt.648	Anne Arundel	1.6	POOR
Upper Magothy R.	1005-0-2003	Balto.Annapolis and Old Mill Rd.	Anne Arundel	1.3	POOR

Appendix B (cont.)

2003 Stream Waders results in the **Manokin River** watershed (total sites = 4). Samples were collected by Roy Emmons and Roberta Krahle.

Stream Name	Site	Nearest Road(s)	County	IBI Score	Condition
Back Cr.	658-1-2003	Rt. 413	Somerset	1.6	POOR
Loretto Br.	661-3-2003	Access Road to UMES	Somerset	1.6	POOR
Manokin R.	661-1-2003	Rt. 213 and Rt. 363	Somerset	1.3	POOR
Manokin R.	661-2-2003	End of Beechwood St.	Somerset	1.3	POOR

2003 Stream Waders results in the **Middle Chester River** watershed (total sites = 10). Samples were collected by Terry Willis and several members of Washington College's Tri Beta Sorority.

Mattaponi Creek	Site	Nearest Road(s)	County	IBI Score	Condition
Chester R. UT	412-2-2003	Rt. 213 and Britland Farm Ln.	Queen Anne's	1.0	POOR
Chester R. UT	410-3-2003	Lover's Ln.	Kent	1.3	POOR
Chester R. UT	410-1-2003	Waterview Ln.	Kent	1.6	POOR
Chester R. UT	410-2-2003	Country Club Ln.	Kent	1.9	POOR
Hambleton Cr.	412-4-2003	Rt. 213	Queen Anne's	1.3	POOR
Hambleton Cr.	412-1-2003	Schrader Rd.	Queen Anne's	2.1	POOR
Morgan Cr.	415-1-2003	Perkins Hill Rd.	Kent	2.4	POOR
Morgan Cr. UT	415-4-2003	Comegys Rd.	Kent	1.6	POOR
Rosin Cr.	412-5-2003	Round Top Rd.	Queen Anne's	1.3	POOR
Rosin Cr.	412-3-2003	Rt. 544	Queen Anne's	1.9	POOR

2003 Stream Waders results in the **Port Tobacco River** watershed (total sites = 38). Samples were collected by Frank Wade, Mary Anne Wade, Connie Dunbar, George Wilmot, David Gardiner, Lucy Flam, Eli Flam, Reed Faasen, Karen Wiggen, Val Weaver, Emily Carrow, Tom Russ, Kimberly Smith, Erin Rainone, Ned Garvey, Peter Garvey and Bill Organet. Thanks to David Gardiner, of the Port Tobacco Conservancy, for organizing these volunteers. This effort will support water chemistry sampling by this organization.

Stream Name	Site	Nearest Road(s)	County	IBI Score	Condition
Hog Holr Run	773-1-2003	Rt. 6 and Mary Ln.	Charles	3.3	FAIR
Hoghole Run	773-2-2003	Rose Hill Rd.	Charles	3.6	FAIR
Jennie Run	774-12-2003	Rt. 301 and Mitchell Rd.	Charles	2.7	POOR
Jennie Run	774-15-2003	Mitchell Rd. and Rt. 225	Charles	4.4	GOOD
Jennie Run UT	774-11-2003	Rt. 301	Charles	1.3	POOR
Jennie Run UT	774-10-2003	Rt. 301	Charles	1.9	POOR
Pages Swamp	774-4-2003	Griffith Lane Rd.	Charles	3.0	FAIR
Pages Swamp	774-5-2003	Rt. 227	Charles	3.6	FAIR
Pages Swamp	774-6-2003	Tunkey Hill Rd.	Charles	3.9	FAIR

Appendix B (cont.)

2003 Stream Waders results in the **Port Tobacco River** watershed (cont.).

Stream Name	Site	Nearest Road(s)	County	IBI Score	Condition
Pages Swamp UT	774-3-2003	Billingsley Rd.	Charles	1.3	POOR
Pages Swamp UT	774-0-2003	Billingsley Rd.	Charles	1.3	POOR
Pages Swamp UT	774-1-2003	Middletown Rd.	Charles	1.6	POOR
Pages Swamp UT	774-2-2003	Billingsley Rd.	Charles	2.1	POOR
Pages Swamp UT	774-7-2003	Wellhouse Dr.	Charles	2.7	POOR
Port Tobacco Cr.	774-17-2003	Rt. 225 and Burford Place	Charles	1.9	POOR
Port Tobacco Cr.	774-29-2003	Rt. 6 and Valley Rd.	Charles	3.0	FAIR
Port Tobacco Cr.	774-20-2003	Rt. 6 and Rose Hill Rd.	Charles	3.3	FAIR
Port Tobacco Cr.	774-9-2003	North Campus Dr. and South Campus Dr.	Charles	3.3	FAIR
Port Tobacco Cr.	774-19-2003	Valley Rd.	Charles	3.6	FAIR
Port Tobacco Cr. UT	774-24-2003	Quailwood Pkwy.	Charles	1.0	POOR
Port Tobacco Cr. UT	774-26-2003	Valby Rd. and Rt. 6	Charles	1.0	POOR
Port Tobacco Cr. UT	774-25-2003	Dosley Dr.	Charles	1.3	POOR
Port Tobacco Cr. UT	774-27-2003	Catulpa Rd. and Buckeye Rd.	Charles	1.3	POOR
Port Tobacco Cr. UT	774-8-2003	ABC Farm Place/ Marshal Corner Rd.	Charles	3.0	FAIR
Port Tobacco Cr. UT	774-23-2003	Quailwood Pkwy.	Charles	3.6	FAIR
Port Tobacco Cr. UT	774-16-2003	Bibury Lane/ Rt. 225	Charles	3.9	FAIR
Port Tobacco Cr. UT	774-28-2003	Stagecoach Rd.	Charles	3.9	FAIR
Port Tobacco Cr. UT	774-18-2003	Tiverton Dr.	Charles	4.1	GOOD
Port Tobacco R. UT	770-4-2003	Blossom Point Rd. and Brentland Rd.	Charles	1.3	POOR
Port Tobacco R. UT	770-5-2003	Atlantic Rd. and Chapel Point Rd.	Charles	1.6	POOR
Port Tobacco R. UT	770-7-2003	Nitze Rd.	Charles	2.7	POOR
Port Tobacco R. UT	770-2-2003	Blossom Point Rd. and Brentland Rd.	Charles	2.7	POOR
Port Tobacco R. UT	770-8-2003	Chapel Point Rd.	Charles	3.3	FAIR
Port Tobacco R. UT	770-1-2003	Rt. 6	Charles	4.7	GOOD
Wills Br.	771-1-2003	Basswood/Twinberry Dr.	Charles	1.0	POOR
Wills Br.	771-2-2003	Twinberry Ct.	Charles	3.9	FAIR
Wills Br.	772-1-2003	Purcell Rd. and Chapel Point Rd.	Charles	4.1	GOOD
Wills Br.	771-3-2003	Purcell Rd. and Chapel Point Rd.	Charles	4.1	GOOD

2003 Stream Waders results in the **Potomac River Middle Tidal** and **Mattawoman Creek** watersheds (total sites = 5). Samples were collected by Sarah Gibbs and Erin Rainone. These samples were collected to support environmental assessments at the Indian Head Naval Research Facility.

Stream Name	Site	Nearest Road(s)	County	IBI Score	Condition
Chicamuxen Cr. UT	789-1-2003	Roach Rd.	Charles	2.7	POOR
Mattawoman Cr. UT	789-2-2003	Watchable Wildlife Area	Charles	3.9	FAIR
Mattawoman Cr. UT	780-2-2003	Propellent Cir.	Charles	1.6	POOR
Mattawoman Cr. UT	780-1-2003	Olsen Rd.	Charles	2.1	POOR
Potomac R. UT	791-1-2003	Torrens Rd. and Dashiell Marina Rd.	Charles	1.6	POOR

Appendix B (cont.)

2003 Stream Waders results in the **Severn River** watershed (total sites = 33). Samples were collected by Natalie Gienger, Sarah Ashton, Thomas Sommerville, Ryan Galligan, Sabrina Burt, Nathan Drescher, Andrea Poling, Chris Victoria and Janis Markusic. Results will support Anne Arundel County's water monitoring efforts.

Stream Name	Site	Nearest Road(s)	County	IBI Score	Condition
Picture Spring Br.	1002-7-2003	Crossroads Dr.	Anne Arundel	1.3	POOR
Picture Spring Br.	1002-97-2003	Crossroads Rd.	Anne Arundel	1.3	POOR
Picture Spring Br.	1002-9-2003	Rt. 170	Anne Arundel	1.3	POOR
Picture Spring Br.	1002-5-2003	Lokus Rd.	Anne Arundel	1.9	POOR
Picture Spring Br.	1002-1-2003	Rt.170 and Rt.175	Anne Arundel	2.4	POOR
Picture Spring Br.	1002-6-2003	Telegraph Rd. and Lamonte Ave.	Anne Arundel	2.4	POOR
Picture Spring Br.	1002-10-2003	Burns Crossing and Old Mill Rd.	Anne Arundel	2.7	POOR
Picture Spring Br.	1002-80-2003	Burns Crossing and Old Mill Rd.	Anne Arundel	2.7	POOR
Picture Spring Br. UT	1002-3-2003	Lokus Rd. and Lamonte Ave.	Anne Arundel	1.0	POOR
Picture Spring Br. UT	1002-2-2003	Oakton Rd.	Anne Arundel	1.3	POOR
Picture Spring Br. UT	1002-92-2003	Oakton Rd.	Anne Arundel	1.3	POOR
Picture Spring Br. UT	1002-4-2003	Lamonte Ave. and Lokus Rd.	Anne Arundel	2.1	POOR
Picture Spring Br. UT	1002-8-2003	Rt.170 and Rt.32	Anne Arundel	2.7	POOR
Severn R. UT	999-9-2003	St. Andrews Rd.	Anne Arundel	1.6	POOR
Severn Run	1002-16-2003	Disney Rd. and Disney Estates Circle	Anne Arundel	1.0	POOR
Severn Run	1002-11-2003	Burns Crossing and Old Mill Rd.	Anne Arundel	3.0	FAIR
Severn Run	1002-82-2003	Burns Crossing and Old Mill Rd.	Anne Arundel	3.3	FAIR
Severn Run	1002-12-2003	Burns Crossing and Old Mill Rd.	Anne Arundel	3.3	FAIR
Severn Run	1002-81-2003	Burns Crossing and Old Mill Rd.	Anne Arundel	3.3	FAIR
Severn Run	1001-2-2003	New Cut Rd.	Anne Arundel	3.3	FAIR
Severn Run	1002-13-2003	New Cut Rd.	Anne Arundel	3.9	FAIR
Severn Run	1002-17-2003	Downey Rd. and Crest Rd.	Anne Arundel	3.9	FAIR
Severn Run	1001-5-2003	Dicus Mill Dr. and Natures Dr.	Anne Arundel	4.1	GOOD
Severn Run	1001-8-2003	Interstate Rt.97 and Benfield Blvd.	Anne Arundel	4.4	GOOD
Severn Run	1001-4-2003	Veteran's Hwy.	Anne Arundel	4.4	GOOD
Severn Run UT	1001-6-2003	Interstate Rt.97 and Benfield Blvd.	Anne Arundel	1.6	POOR
Severn Run UT	1001-3-2003	New Cut Rd.	Anne Arundel	2.4	POOR
Severn Run UT	1001-9-2003	Oakdale Cir.	Anne Arundel	2.7	POOR
Severn Run UT	1002-14-2003	Sandy Hill Rd. and Quarterfield Rd.	Anne Arundel	2.7	POOR
Severn Run UT	1001-1-2003	Upton Rd. and New Cut Rd.	Anne Arundel	2.7	POOR
Severn Run UT	1001-7-2003	Interstate Rt.97 and Benfield Blvd.	Anne Arundel	3.3	FAIR
Severn Run UT	1002-15-2003	Telegraph Rd. and Monard Ave.	Anne Arundel	4.1	GOOD
Sewell Spring Br.	999-6-2003	Maple Hill Ln.	Anne Arundel	1.3	POOR

Appendix B (cont.)

2003 Stream Waders results in the **St. Mary's River** watershed (total sites = 4). Samples were collected by collected by Bob Paul, April Mason, Stephanie Jellirre, Bob Lewis and Merideth Taylor. Results support other monitoring efforts conducted by St. Mary's College.

Stream Name	Site	Nearest Road(s)	County	IBI Score	Condition
Hilton Run	715-6-2003	Willows Rd.	St. Mary's	3.0	FAIR
Hilton Run	715-5-2003	Rt. 5 and Cullison Ln.	St. Mary's	3.6	FAIR
Hilton Run	715-4-2003	Rt. 5	St. Mary's	3.6	FAIR
Pembroke Run	716-1-2003	Old Hermanville Rd.	St. Mary's	3.9	FAIR

2003 Stream Waders results in the **Wye River** watershed (total sites = 16). Samples were collected by Wayne Bush and Maggie Sanzone.

Stream Name	Site	Nearest Road(s)	County	IBI Score	Condition
Golden Run	437-1-2003	Poplar School Rd. and Grange Hall Rd.	Queen Anne's	2.7	POOR
Golden Run	437-4-2003	Grange Farm Rd.	Queen Anne's	2.7	POOR
Mill Cr.	435-1-2003	Newton Rd. and Rt. 404	Talbot	3.3	FAIR
Mill Cr. UT	435-4-2003	Rt. 662 (Wye Mills Rd.)	Talbot	1.3	POOR
Mill Cr. UT	435-2-2003	Dublin Rd. and Newton Rd.	Talbot	1.3	POOR
Skipton Cr. UT	434-1-2003	Three Branch Rd. and Rt. 662	Talbot	3.0	FAIR
Skipton Cr. UT	435-3-2003	Cordova Rd. and Newton Village Rd.	Talbot	4.4	GOOD
Wye East R. UT	436-3-2003	Bloomingdale Rd. and Rt. 301	Queen Anne's	1.3	POOR
Wye East R. UT	436-2-2003	Bloomingdale Rd. and Rt. 301	Queen Anne's	1.3	POOR
Wye East R. UT	437-3-2003	Owens Rd. and Rt. 404	Queen Anne's	1.3	POOR
Wye East R. UT	437-5-2003	Charles Boyles Rd.	Queen Anne's	1.3	POOR
Wye East R. UT	436-1-2003	John Brown Rd. and Rt. 213	Queen Anne's	1.6	POOR
Wye East R. UT	436-5-2003	Rt. 50 and Scotts View Ln.	Queen Anne's	1.9	POOR
Wye East R. UT	436-4-2003	Arrington Rd. and Rt. 50	Queen Anne's	3.9	FAIR
Wye R. UT	433-1-2003	Rt. 301 and Cherry Ln.	Queen Anne's	1.6	POOR
Wye R. UT	433-2-2003	Rt. 301 and Greenspring Rd.	Queen Anne's	2.7	POOR